

## AMENDMENT AND RESPONSE

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Serial No.: 09/826,246

Filing Date: April 4, 2001

Attorney Docket No. 100.169US01

Title: FILTER STRUCTURE INCLUDING CIRCUIT BOARD

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**Amendments to the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application:

**Listing of claims:**

1. (Canceled)
2. (Canceled)
3. (Canceled)
4. (Canceled)
5. (Canceled)
6. (Currently Amended) The filter assembly of claim 4 13, wherein the at least one circuit element further comprises an amplifier.
7. (Original) The filter assembly of claim 6, wherein the amplifier is one of a low noise amplifier and a power amplifier.
8. (Canceled)
9. (Canceled)
10. (Canceled)
11. (Canceled)
12. (Canceled)
13. (Currently Amended) ~~The filter assembly of claim 1,~~ A filter assembly, comprising:  
an enclosure having a cavity;  
at least one wall of the enclosure comprised of a circuit board;  
a trace formed on the circuit board; and  
at least one circuit element, coupled to the trace; and  
wherein the filter assembly further comprises:

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a first filter stage and a second filter stage formed in the enclosure, wherein the first and second filter stage each have a cavity;  
an input connector attached to the circuit board and coupled to the first filter stage;  
an output coupling structure mounted in the cavity of the first filter stage and coupled to an input of a low noise amplifier;  
an input coupling structure mounted in the cavity of the second filter stage and coupled to an output of the low noise amplifier; and  
an output connector attached to the circuit board coupled to the cavity of the second filter stage.

14. (Currently Amended) The filter assembly of claim 13, wherein the circuit board comprises an inter-stage coupling circuit, the inter-stage coupling circuit comprising:  
at least one the input coupling structure mounted in the cavity; and  
at least one the output coupling structure mounted in the cavity and coupled to the at least one input coupling structure.
15. (Original) The filter assembly of claim 14, wherein the inter-stage coupling circuit further comprises a signal trace formed on the circuit board.
16. (Original) The filter assembly of claim 15, wherein the signal trace is formed in one of an internal circuit layer of the circuit board and a surface circuit layer of the circuit board.
17. (Canceled)
18. (Canceled)
19. (Canceled)
20. (Canceled)
21. (Canceled)
22. (Canceled)
23. (Canceled)
24. (Canceled)

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25. (Canceled)

26. (Canceled)

27. (Canceled)

28. (Canceled)

29. (Canceled)

30. (Canceled)

31. (Canceled)

32. (Canceled)

33. (Canceled)

34. (Canceled)

35. (Canceled)

36. (Canceled)

37. (Canceled)

38. (Canceled)

39. (Canceled)

40. (Currently Amended) The method of claim ~~37~~ 45, wherein coupling the electronic component to the trace comprises coupling an amplifier circuit to the trace.

41. (Original) The method of claim 40, wherein coupling the amplifier circuit comprises coupling at least one of a low noise amplifier and a power amplifier to the trace.

42. (Canceled)

43. (Canceled)

44. (Canceled)

45. (Currently Amended) ~~The method of claim 37,~~ A method of making a filter assembly, comprising:

forming a cavity body with a cavity and with at least one opening in the cavity body;

forming a trace on a printed circuit board;

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coupling an electronic component to the trace; and

covering the at least one opening in the cavity body with the printed circuit board; and

wherein forming the circuit board further comprises:

forming an input connector attached to the circuit board and coupled to the cavity;

and

forming an output connector attached to the circuit board and coupled to the cavity.

46. (Canceled)

47. (Currently Amended) ~~The method of claim 37,~~ A method of making a filter assembly, comprising:

forming a cavity body with a cavity and with at least one opening in the cavity body;

forming a trace on a printed circuit board;

coupling an electronic component to the trace; and

covering the at least one opening in the cavity body with the printed circuit board; and

wherein forming the circuit board further comprises:

forming a first filter stage and a second filter stage formed in the enclosure,

wherein the first and second filter stage each have cavity;

forming an input connector attached to the circuit board and coupled to the first filter stage;

forming an output coupling structure mounted in the cavity of the first filter stage and coupled to an input of a low noise amplifier;

forming an input coupling structure mounted in the cavity of the second filter stage and coupled to an output of the low noise amplifier; and

forming an output connector attached to the circuit board coupled to the cavity of the second filter stage.

48. (Currently Amended) ~~The method of claim 37,~~ A method of making a filter assembly, comprising:

forming a cavity body with a cavity and with at least one opening in the cavity body;

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forming a trace on a printed circuit board;

coupling an electronic component to the trace; and

covering the at least one opening in the cavity body with the printed circuit board; and

wherein forming the circuit board further comprises forming an inter-stage coupling circuit, the inter-stage coupling circuit comprising:

at least one input coupling structure mounted in the cavity; and

at least one output coupling structure mounted in the cavity and coupled to the at least one input coupling structure.

49. (Original) The method of claim 48, wherein forming the inter-stage coupling circuit further comprises forming a signal trace on the circuit board.
50. (Original) The method of claim 49, wherein forming the signal trace further comprises one of forming the signal trace in an internal circuit layer of the circuit board and forming the signal trace in a surface circuit layer of the circuit board.
51. (Canceled)
52. (Canceled)
53. (Canceled)
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54. (Canceled)
55. (Canceled)
56. (Canceled)
57. (Canceled)
58. (Canceled)
59. (Canceled)
60. (Canceled)
61. (Canceled)
62. (Canceled)
63. (Canceled)
64. (Canceled)

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- 65. (Canceled)
- 66. (Canceled)
- 67. (Canceled)
- 68. (Canceled)
- 69. (Canceled)
- 70. (Canceled)
- 71. (Canceled)
- 72. (Canceled)
- 73. (Canceled)